kinases to regulate MEKK1 (Su, et al., EMBO J., 16:1279-1290 (1997)). MINK3 may be recruited in a similar fashion.

On page 69, immediately preceding the heading "CLAIMS", please insert the enclosed text entitled "SEQUENCE LISTING".

REMARKS

The specification has been amended to include a Sequence Listing and proper reference to the sequences therein. Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "Version with markings to show changes made."

Entry of this amendment is respectfully requested. The amendments are made in adherence with 37 C.F.R. § 1.821-1.825. This amendment is accompanied by a floppy disk containing the above named sequence, SEQUENCE ID NUMBERS 1-15 in computer readable form, and a paper copy of the sequence information. The computer readable sequence listing was prepared through use of the software program "PatentIn" provided by the PTO. The information contained in the computer readable disk is identical to that of the paper copy. This amendment contains no new matter. Applicant submits that this amendment, the accompanying computer readable sequence listing, and the paper copy thereof serve to place this application in a condition

of adherence to the rules 37 C.F.R. § 1.821-1.825. Please direct any calls in connection with this application to the undersigned at (415) 781-1989.

Respectfully submitted,

Dated: 6/17/02

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Filed under 37 C.F.R. Section 1.34(a)

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION:

Paragraph beginning at page 65, line 2, has been amended as follows:

— *Plasmid construction* – Full length human MINK3 was cloned into pCI (Promega) derived expression vector pYCI under the control of the CMV promoter with an HA epitope tag (AYPYDVPDYA (SEQ ID NO:7)) inserted on the N-terminus by PCR. A kinase mutant form of MINK3 was constructed using the QuikChange mutagenesis kit (Stratagene) with Oligos AGCTTGCAGCCATCAGGGTTATGGATGTCAC (SEQ ID NO:8) and GTGACATCCATAACCTTGATGGCTGCAAGCT (SEQ ID NO:9) to change the highly conserved lysine 54 in the kinase domain to arginine. Full length human NCK was similarly cloned into pYCI with a FLAG epitope tag at the N-terminus. Myc-JNK2 and Myc-ERK1 were constructed in the pCR3.1 vector with a Myc epitope tag (ASMEQKLISEEDLN (SEQ ID NO:10)) inserted on the N-terminus of JNK2 and ERK1, respectively. All the truncation mutants were constructed by PCR.—

Paragraph beginning at page 67, line 34, has been amended as follows:

— NIK was cloned by its ability to interact with the adapter protein NCK. It associated with NCK SH3 domains via two PxxPxR sequences in the intermediate domain, PCPPSR (aa 574-579; SEQ ID NO:11) and PRVPVR (aa 611-616; SEQ ID NO:12). Both sequences were required for efficient interaction (Su, et al., EMBO J., 16:1279-1290 (1997)). Similar to NIK, MINK3 also interacted with NCK via the intermediate domain. However, PCPPSR is not conserved in MINK3. Instead, MINK3 contained two other PxxPxR sequences, PNLPPR (aa 562-567; SEQ ID NO:13) and PPLPTR (aa 647-652; SEQ ID NO:14), in addition to the conserved PKVPQR (aa 670-675; SEQ ID NO:15). MINK3 likely interacted with NCK through the cooperative interaction with these three PxxPxR sequences. NCK is an adapter protein involved in many growth factor receptor

mediated signal transduction pathways (McCarthy, Bioessays, 20:913-921 (1998)). It has been proposed that the NIK-NCK interaction may recruit NIK to receptor or non-receptor tyrosine kinases to regulate MEKK1 (Su, et al., EMBO J., 16:1279-1290 (1997)). MINK3 may be recruited in a similar fashion.—

On page 69, immediately preceding the heading "CLAIMS", the enclosed "SEQUENCE LISTING" was inserted into the specification.